



Energy Efficiency

#5 FRUIT AND VEGETABLES - PACKING

This case study features the packing facilities of a strawberry and zucchini grower in southeast Queensland. Annual strawberry production hits about 780 tonnes per year from the 180,000 plants.

This operation includes two packing lines for the different crops and the plant is about 15 years old. Together, the two lines consume 1,448kWh per year. The lines are managed so as to include short run-times (820 and 420 hours per year) with high through-put.

The biggest consumers of electricity in the facility are the 26 40W fluorescent lights. These consume 725kWh, half of the total.

While the energy consumption of the packing facility is already relatively small, the lighting is an obvious target for further efficiency gains.

Natural light

Using natural light where possible is a good way to save electricity during daylight hours. A combination of windows, sky lights and polycarbonate roof sheeting can help provide more natural light to indoor work spaces. However, it's important to consider the balance between light and heat gain which can depend on the local climate and building design. Windows tinting is one way to control heat while allowing light to enter the work space.

Light bulbs

There are many types of light bulbs which differ in their efficiency, brightness, colour and lifespan. These different qualities mean that each type is best suited to different applications. High Intensity Discharge (HID) lamps such as high pressure sodium vapour lamps can be very efficient, but they can take minutes to warm up and their yellow tinted light can impede colour recognition. Light Emitting Diode (LED) lamps are very efficient but expensive, although costs are coming down as they become more common.

In some cases, the bulb type can be changed using the same fittings making it a relatively cheap DIY improvement. However, replacing light fittings throughout an operation is likely to be an expensive exercise requiring the use of an electrical tradesperson. In most cases, the most economical option will usually be to make a change when fittings need to be replaced anyway. The Growcom fact sheet on lighting includes a detailed table of the qualities and benefits of the common lamp types.

Timers, light sensors & motion sensors

These devices can be a very cost-effective way to achieve localised lighting, where workspaces are lit only when and where required. These are much more convenient and reliable than switching lights on and off manually.

Keep it clean

Whatever type of bulb is being used, keeping them clean will increase the amount of light.

Actions

The farm owners are already minimising energy use by managing runtimes of the two packing lines. Given the relatively minor level of consumption within this facility, no additional efficiency measures that require investment have been implemented at this stage.

More information

Further details are contained in Growcom Energy Efficiency factsheets, available from the Growcom website.

Disclaimer: The examples in this fact sheet are provided for general information and do not constitute financial advice. We encourage growers to seek specialist financial advice before making significant investments.

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